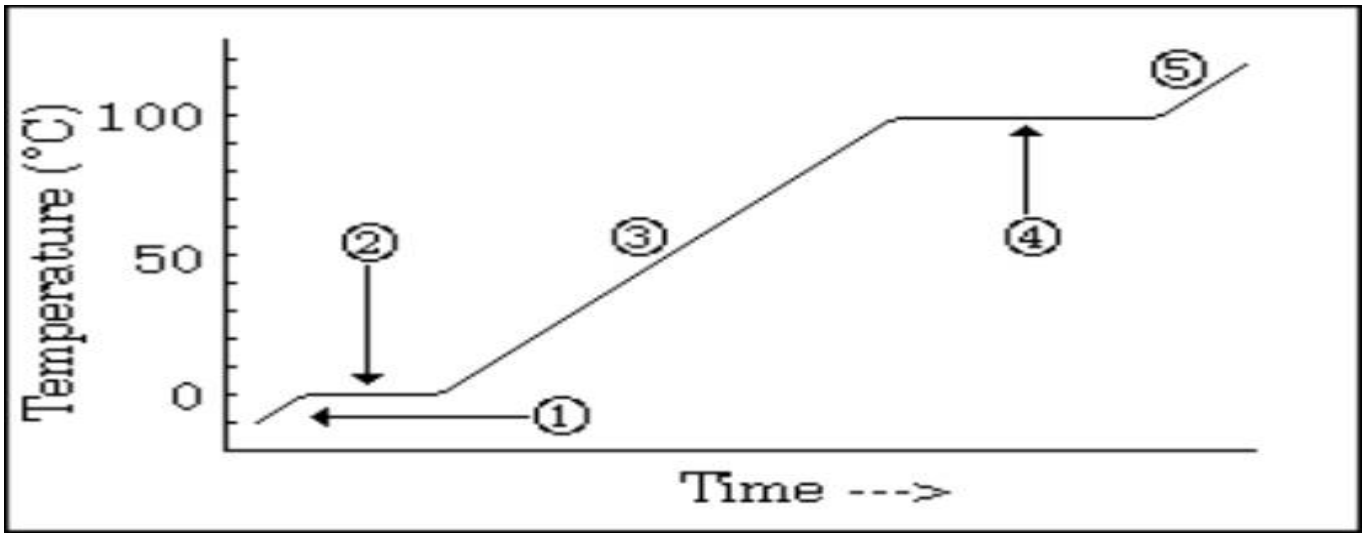
# The Nature of Matter WS 4




Questions:

1. What is happening to the average kinetic energy of the particles during section 2? Explain.

2. Draw a before and after particle diagram to support your answer to question 1.

3. As the substance goes through section 3, what happens to the distance between the particles? Explain.

4. Draw a before and after particle diagram to support your answer to question 3.

5. What is the name of the process happening during section 4?

6. What would be the name of the process happening during section 4 if time were going the other way?

7. What is the melting point of this substance?

8. Indicate the temperatures which the following would begin
    a. This sample start boiling?

    b. This sample finish boiling?

    c. Explain.

9. For section 3 of the graph, the temperature does not remain constant because:
    a. Heat is not being absorbed
    b. The ice is colder that the water
    c. Heat energy is being converted to potential energy
    d. Heat energy is being converted to kinetic energy

   EXPLAIN YOUR CHOICE:

10. When this substance is melting, the temperature of the ice-water mixture remains constant because:
    a. Heat is not being absorbed
    b. The ice is colder that the water
    c. Heat energy is being converted to potential energy
    d. Heat energy is being converted to kinetic energy

   EXPLAIN YOUR CHOICE:

11. The temperature at which a substance in the liquid state freezes is the same as the temperature at which the substance-

    a. Melts b. Sublimes c. Boils d. Condenses

12. Is this curve showing an addition of energy or a release of energy? Explain.

13. Identify the state(s) of matter in:
    a. part 1 on the graph:

    b. part 2 on the graph:

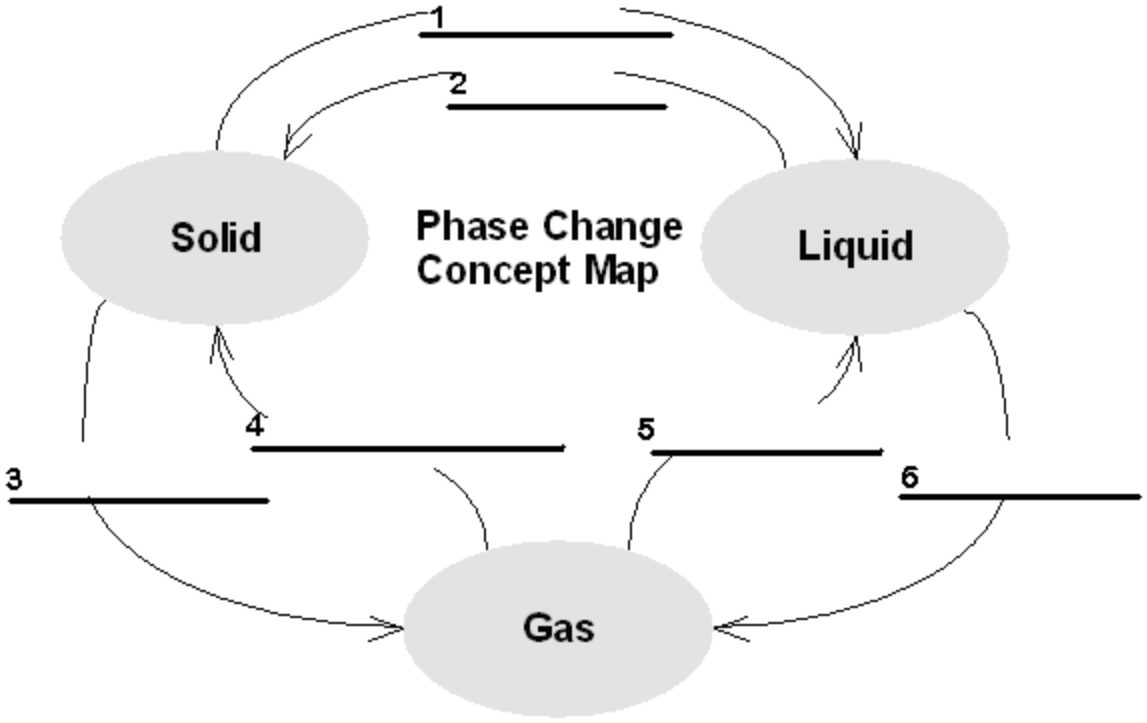
    c. part 3 on the graph:

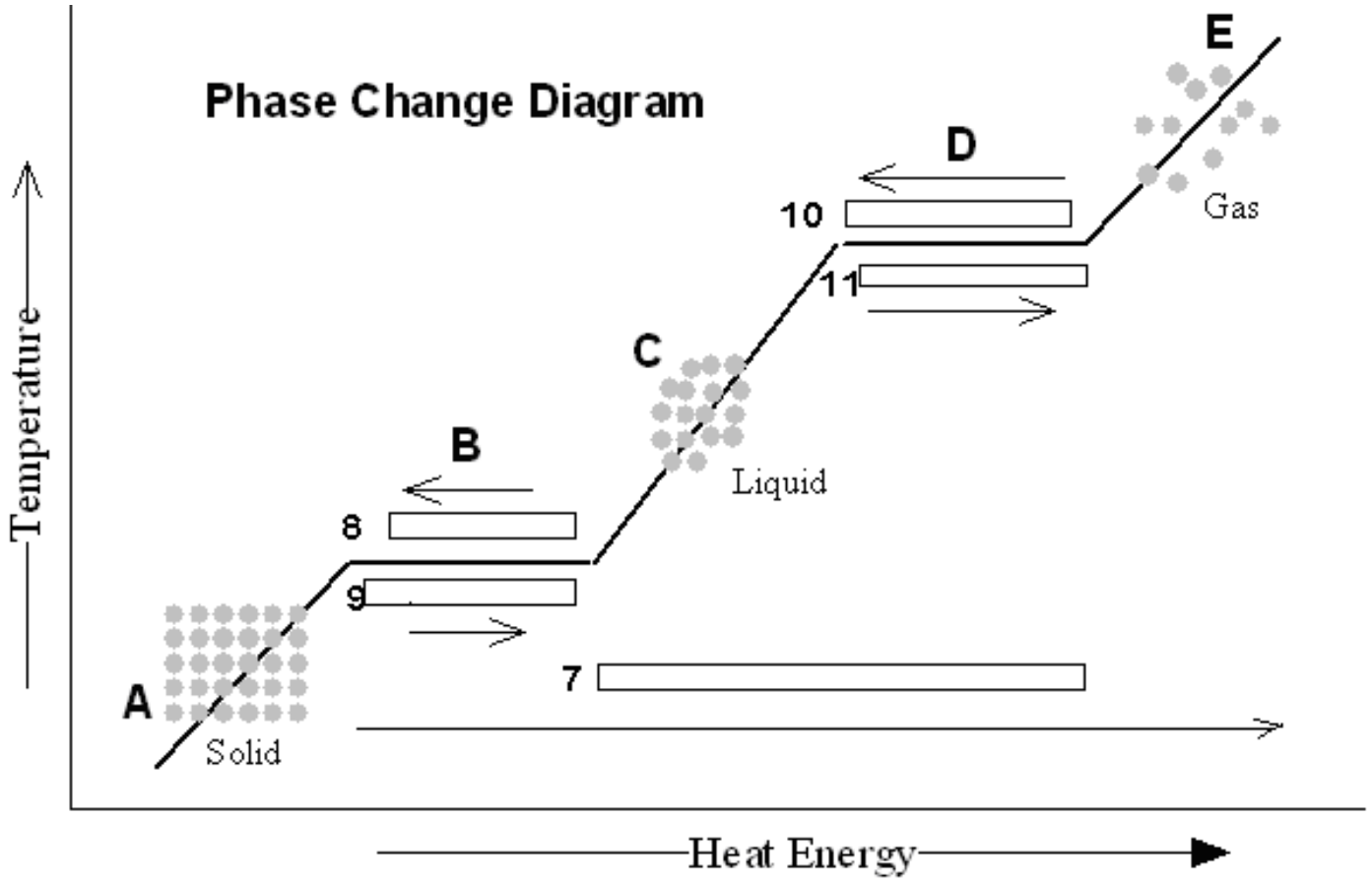
    d. part 4 on the graph:

e. part 5 on the graph:

# Phase Changes & Heating Curves

On the following diagrams indicate the appropriate term that would fit within the phase changes.




Phase Change Diagram
Temperature
Heat Energy
A
Solid
B
C
Liquid
D
E
Gas
7
8
9
10
11